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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,497	03/30/2001	Shawmin Lei	8371-128	6557

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EXAMINER

ALAVI, AMIR

ART UNIT PAPER NUMBER

2621

DATE MAILED: 02/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/823,497

Applicant(s)

LEI ET AL.

Examiner

Amir Alavi

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2.3.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### **Specification**

- Applicant is reminded of the proper language and format for an abstract of the disclosure.
- The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.
- The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

## **Claim Rejections - 35 USC § 102**

- The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Maeda et al. (US 5,341,441).

Regarding claim 1, Maeda et al., disclose: receiving a VQ encoded image (Please note, figure 1, elements 16, 17 and 19, in correlation to column 12, line 21. As indicated a vector quantized compressed code is received at a receiving unit 19); decoding the VQ encoded image (Please note, figure 1, element 20, in correlation to column 12, lines 21-22. As indicated a vector quantized compressed code is received at a receiving unit 19 and further decoded in a decoding unit 20); and performing output image color space processing in conjunction with the decoding (Please note, figure 1, element 21; figure 9, element 21, in correlation to column 13, lines 35-39.

As indicated a color converter for dividing the inputted image signals RGB into pixel blocks and converting these into a pixel block of a luminosity signal  $L^*$  and pixel blocks of chromaticity signals  $a^*b^*$  in CIE uniform color space).

Regarding claim 2, Maeda et al., disclose, wherein output image color space processing further comprises half-toning (Please note, column 20, lines 20-44, in this regard, wherein indicated a two bit data is in fact representative of half-tone).

Regarding claim 3, Maeda et al., disclose, wherein output image color space processing further comprises color transformation (Please note, figure 1, element 21; figure 9, element 21, in correlation to column 13, lines 35-39. As indicated a color converter for dividing the inputted image signals RGB into pixel blocks and converting these into a pixel block of a luminosity signal  $L^*$  and pixel blocks of chromaticity signals  $a^*b^*$  in CIE uniform color space).

Regarding claim 4, Maeda et al., disclose, wherein output image color space processing further comprises color transformation and half-toning (Please note, figure 1, element 21; figure 9, element 21, in correlation to column 13, lines 35-39 and column 20, lines 20-44. As indicated a color converter for dividing the inputted image signals RGB into pixel blocks and converting these into a pixel block of a luminosity signal  $L^*$  and pixel

blocks of chromaticity signals  $a^*b^*$  in CIE uniform color space, in this regard, wherein indicated a two bit data is in fact representative of half-tone).

Regarding claim 5, Maeda et al., disclose, wherein the VQ encoded image is in the luminance-chrominance color space (Please note, figure 1, element 21; figure 9, element 21, in correlation to column 13, lines 35-39. As indicated a color converter for dividing the inputted image signals RGB into pixel blocks and converting these into a pixel block of a luminosity signal  $L^*$  and pixel blocks of chromaticity signals  $a^*b^*$  in CIE uniform color space).

Regarding claim 6, Maeda et al., disclose, wherein the output image color space processing produces RGB data (Please note, column 12, lines 28-30. As indicated the image data decoded by the decoding unit 20 are outputted by an image output unit 21. The latter can be a soft copy such as a display. In this regard, a display is representative of RGB data).

Regarding claim 7, Maeda et al., disclose, wherein the output image color space processing produces CMYK data (Please note, column 12, line 37)).

Regarding claim 8, Maeda et al., disclose, wherein the VQ encoded image is encoded with a codebook that is not a power of 2 (Please note, column 4, lines 25-26. As indicated performing vector quantization and

outputting  $n$ -bit data, where  $n < 1 * m$ . In this regard, since  $m$  times unity is  $m$ , therefore  $n < m$ , in this, having a matrix of  $n * m$  is not a power of 2).

Regarding claim 9, Maeda et al., disclose, wherein the VQ decoding footprint is a subset of the halftone footprint (Please note, column 23, lines 56-67).

Regarding claim 10, Maeda et al., disclose, wherein the VQ encoded image is encoded through compression of a vector formed by data from multiple color components (Please note, figure 1, element 16 and 17, in correlation to column 13, lines 35-39. As indicated a color converter for dividing the inputted image signals RGB into pixel blocks and converting these into a pixel block of a luminosity signal  $L^*$  and pixel blocks of chromaticity signals  $a^*b^*$  in CIE uniform color space. In this regard color space RGB is comprised of three distinct color components R, G, B).

Regarding claim 11, arguments analogous to those presented for claim 1, are applicable.

Regarding claim 12, Maeda et al., disclose: at least one input path operable to receive VQ encoded data (Please note, figure 1, element 11); a lut operable to provide output values for a given input value (Please note, figure 1, element 16); a processor operable to receive the VQ encoded data and access the lut to acquire output values (Please note figure 1, this figure as a whole is a processor performing different processing); and

at least one output path operable to allow the processor to transmit the output values for further processing (Please note, figure 1, element 18).

### **Other prior art cited**

- The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Martins et al. (IEEE 1999) is pertinent as teaching lossless, near lossless, and refinement coding of bilevel images.

Dujmic et al. (IEEE 2000) is pertinent as teaching inverse error diffusion using table look-up and vector quantization.

Maeda et al. (US 6,072,910) is pertinent as teaching method and apparatus for coding image information, and method of creating code book.

Nishikawa (US 6,587,222 B2) is pertinent as teaching image processing apparatus for converting image data in accordance with characteristics of an image obtained at the time of expansion.



Tanaka (US 4,797,739) is pertinent as teaching method of compressing and reconstructing image signals by vector quantization.

Loce et al. (US 6,356,654 B1) is pertinent as teaching systems and methods for template matching of multicolored images.

Koshi et al. (US 5,414,527) is pertinent as teaching image encoding apparatus sensitive to tone variations.

Hirabayashi (US 5,751,856) is pertinent as teaching system for processing a quantized vector using spatial frequency correlations.

Nafarieh (US 6,252,994 B1) is pertinent as teaching adaptive quantization compatible with the JPEG baseline sequential mode.

## **Contact Information**

- Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Amir Alavi whose telephone number is (703) 306-5913.
- The Examiner can normally be reached on Monday through Thursday from 8:00 a.m. to 6:30 p.m. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Leo Boudreau, can be reached at (703) 305-4706.

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Any response to this action should be mailed to:

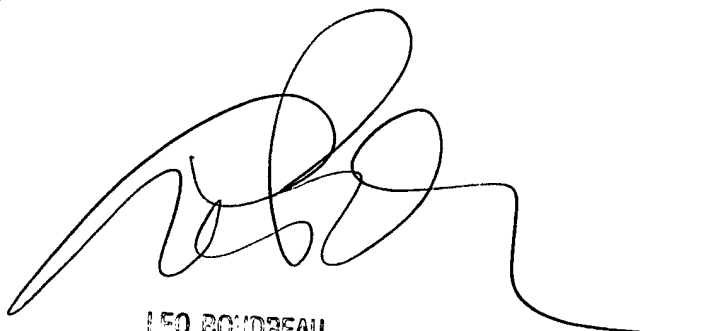
Assistant Commissioner for Patents

Washington, D.C. 20231

**Or faxed to:**

(703) 872-9306, ("draft" or "informal" communications should be clearly  
labeled to expedite delivery to Examiner)

**Hand delivered responses** should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist). Any inquiry of a general nature or relating to the status of this application should be directed to the T.C. Customer Service Office whose telephone number is (703) 306-0377.



LEO BOUDREAU  
SUSPENSORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

AA  
January 29, 2004